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ORIGINAL LECTURES.

RETINAL IRRITATION.

Delivered before the Spring Class of 1878, in Ophthalmoscopy, at the University of Pennsylvania,

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GENTLEMEN,—Before introducing to you the more serious forms of retinal and nerve disease, I invite your attention to-day to the subject of retinal irritation.

It is a condition which you will meet with much more frequently than you will see well-pronounced retinitis, provided you do not allow it to pass unheeded, as I did myself for many years. It will by no means be surprising if you do not recognize the first case of retinal irritation that confronts you, for it is not a condition which holds up before your gaze gross pathological changes, such as I shall show you hereafter as the result of neuritis, neuro-retinitis, morbus Brightii, pigmentary retinitis, etc., etc. Nevertheless, the abnormal appearance of the retina is quite enough to declare the presence of this condition, and you should be able to recognize it. All the more is it important to detect it, since it is an extremely frequent source of the discomfort from which your eye-patients will complain, and may be referred to the wrong source. The red and generally irritable appearance of the external tunics may lead you to treat these cases for their conjunctival hyperæmia, if you are not well on your guard about this matter of retinal irritation. Or if associated with some obvious refraction error, you may ascribe all the annoyance to this cause alone, and still overlook the retinal trouble.

The subjective symptoms of retinal irritation are by no means pathognomonic, since a pronounced retinitis or choroiditis may give rise to no greater distress, or may express themselves by a like chain of symptoms.

Patients with retinal irritation will come to you complaining that their eyes are weak, and are prone to ascribe the weakness to some undue strain to which they have been subjected. Ladies frequently ascribe it to protracted use at fancy needlework, or to sewing on black cloth at night; or affirm it to have followed some of the continued fevers, or, it may be, some more acute malady, since which they have not been able to use the eyes comfortably, particularly at night. They complain that on attempting to sew or read by artificial light the eyes soon grow weary, and a sense of heat and fulness, it may be without actual pain, comes on. If the effort at work is persisted in, the eyes water, the lids grate roughly over the ball, or itch and smart, or burn, until perforce the attempt at work is relinquished. These uncomfortable sensations often last far into the night, disturbing the sleep. Relief, however, is usually sought in bathing them in cold water, a remedy which very naturally suggests itself as the surest way to relieve the burning heat in the eyes. These symptoms at first follow use of the eyes by artificial light only, but very soon protracted use during the day brings on a less aggravated chain of symptoms, and work at night is no longer attempted except under the most compulsory circumstances. The glare of the gas-lights is avoided as unpleasant, rather than painful. The sufferer consequently stays away from church at night and from places of public amusement, or makes use of a tinted or smoked glass to modify the light.

The vision, however, remains unimpaired; indeed, the patient may be able to decipher letters at longer distances than can his friends, or than he himself could do formerly. The external tunics are injected. Careful inspection shows the tarsal conjunctiva hyperæmic, and the edges of the lids are at times red, scaly, and slightly thickened. The episcleral vessels are dilated, and after reading a few moments there is a slight pericorneal zone of injection; and when facing the window or a bright light, the pupil contracts strongly. The same takes place when light is thrown upon the retina from the ophthalmoscopic mirror, making careful inspection of the fundus oculi extremely difficult,—often, indeed, quite unsatisfactory until the pupil is dilated by atropia. Very frequently the symptoms of irritation are not confined to the eye, but periorbital neuralgia which radiates to the temples, vertex, and occiput follows any protracted work at a near

point. Pain in the back of the head and neck is indeed quite characteristic of this condition of irritability, especially when it is present with some error of refraction or muscular anomaly producing eye-strain. So frequently is this occipital and neck trouble present that I rarely omit inquiring for it. It is described often as a sense of soreness or fatigue rather than acute pain: *e.g.*, a gentleman said to me that he felt as though he had been sleeping with the back of his neck and head on a "billet of wood for a pillow." The pain not unfrequently radiates outward to the shoulders.

It often happens that these frontal and occipital pains are constant, and only aggravated by use of the eyes.

Ophthalmoscopic inspection of the eye-ground reveals no striking appearances, but a careful study will show the nerve-surface unduly capillary, the central veins dark, full, and relatively too large. Frequently the vessels will be found to have lost their smoothness of outline, appearing roughened or granular. The increased capillarity of the optic nerve gives to its surface, as seen with the ophthalmoscope, a brickdust-red tint, instead of the pinkish white of the normal nerve, so that there is a less striking difference in tint between the red choroid and the optic nerve surface.

Moreover, the nerve has lost its transparency. In a perfectly healthy eye you are conscious of looking through the nearly transparent nerve-fibres back into the nerve, to and into the lamina cribrosa. You will recall here what I said to you when speaking of the central physiological excavation seen in many healthy eyes, and the explanation I gave of the appearances shown so well in the colored lantern slide representing this condition.

Now, in these cases of well-marked retinal irritation, if of long standing, you will frequently find a want of this transparency. The picture of a normal nerve being in your mind, this at once strikes an attentive observer as different, and yet a difference difficult to describe. You look into the face of your familiar friend, and at once conclude that he is not enjoying perfectly vigorous health. You would find it difficult to convey to a third person the appearances upon which you based your conclusion. Yet they were quite sufficient basis for your own judgment in the matter. In like manner the optic nerve appears to you "out of sorts," and you are led to still more careful examination. Accurate focussing will not bring out clearly defined the border of the nerve, and the reason will be found to exist in delicate striæ in the retina, radiating in all directions, and due probably to a slight want of transparency in the fibre layer of the retina, just at and beyond the point of emergence of the nerve fibre for distribution as the retina. As they pass over the sharply-defined scleral ring, the very slight milkiness of the retina obscures the otherwise sharp outline for the nerve which it furnishes. In pronounced cases of retinitis and neuro-retinitis, as we shall see hereafter, the nerve-border is entirely hidden from view by the opaque retina. These delicate striæ may often be traced a full disk's width beyond the border of the optic nerve disk. This condition may last for long periods of time without any more marked change than that I have described.

You will often be worried in these cases of retinal irritation lest you have to deal with a case, possibly, of descending neuritis or of neuro-retinitis at an incipient stage; and indeed I must confess to you that it is not always easy, nay, nor always possible, to say with positive candor and certainty that you have not the graver malady to deal with; but usually a careful study of all the features of the case, both subjective and objective, will enable you to arrive at the true nature of the disease. The extreme delicacy of the problem, however, will come home to you, I think, when I call to your mind once more the frequency with which fronto-occipital headache is associated with mere retinal irritation. I have not yet spoken of the distressing nervous symptoms which I have repeatedly encountered in these cases, and which appeared to have had their *fons et origo* in the eye-strain and retinal irritation. These will be more fully alluded to later. To approach, however, one of these cases with a possible mental bias towards cerebral disease, it would not be difficult to arrive at a very grave opinion, which would not, of course, be justified by the subsequent developments of the disease,—certainly not in all cases of retinal irritation. I make this guarded qualification here, for, as we shall see presently when I come to speak of the causes of retinal irritation, it is probable that many times the retinal trouble is only common to the nervous

system at large, or may be the result of approaching inflammatory disease.

In retinal irritation, however, of purely local origin, or at least simply of local import, there will be quite enough in the general symptoms of the case to exclude serious cerebral or general nerve disease. In the local expression of the trouble there are many points which go to differentiate it from the more serious malady.

The causes of retinal irritation are various, and in not a few cases very obscure. I have repeatedly met with it in children from eight to twelve years of age; more rarely in advanced life. You will find it in the otherwise robust and healthy, but more frequently in the overworked and physically weak.

I at one time brought on a condition of retinal irritation in my own eyes, which troubled me many weeks, by reading for several hours in an open carriage, on a bright, clear day, during a tedious journey over a sandy road. I was consulted but a few weeks since by a carpenter, who had been working in the sun shingling a roof. I found him with retinal irritation, which soon subsided under rest and the use of a smoked glass to shield the retina from bright light. Had he persisted in his work, the condition of irritation and hyperæmia would doubtless have passed over into *retinitis*.

I was consulted by a gentleman from a distant city, who had been compelled to give up his position as a clerk, because of the eye-ache and pain in his head which were sure to follow a few hours spent over his books. I found his retina in the condition I have described as characteristic of irritation. He had a low degree of simple hypermetropic astigmatism ($=\frac{1}{48}$), with some weakness of the internal rectus muscles. Thinking the condition of the retina might depend upon this cause, I very carefully corrected these defects by a pair of glasses selected after continued use of atropia. His eyes improved under the use of the atropia, and at the end of the treatment were feeling quite well. The ophthalmoscope revealed a great improvement in the choroid and retina. The central vessels of the retina were less engorged than at first, the optic nerve had lost its brickdust color, and the slight haze which had blurred the borders of the nerve-disk had disappeared.

He went back to his home armed with his correcting glass, and stopped the atropia. He returned in a month with his eyes far back towards the condition in which I had at first found them. The correction of his refraction error and the muscular anomaly had been of some aid to him, for he could work for a short time with his glasses, but not at all without them. Other nervous symptoms led me to inquire further for some cause for the extreme irritability of his retina. He acknowledged the most inordinate sexual indulgence. He was placed upon his guard in this matter, and in a month returned to his clerical duties, and has since been able to use his eyes with comfort during the day, and the undue sensitiveness to artificial light is rapidly diminishing. This is only one instance selected from very many others where I have been led to believe that the retinal condition stood in very positive relation with derangement and excesses in the sexual functions. In these cases there have invariably been other nervous symptoms present, which doubtless stamp the retinal irritability as only one with the general condition of the nervous system. The eyes suffered most, because they were in more active use under unfavorable conditions,—*i.e.*, the refraction error,—the employment of the individual having demanded prolonged use at a near point.

By far the most frequent cause for retinal irritation is some defect in the refraction of the eye. It is the rarest circumstance to find a case of persistent, well-marked retino-choroidal irritation in eyes free from error in this respect. The amount of work even under unfavorable circumstances, as of bad light, etc., which a perfect eye will bear, has long been a matter of surprise to me, but not more so than the certainty with which defective eyes break down under like usage. Given an astigmatic eye and bad light or print, etc., and we have trouble, while without such defect no trouble would have ensued. No class of persons, perhaps, use their eyes under more unfavorable surroundings, or for a greater number of hours in the twenty-four, than medical students. A large number every year consult us, at the eye dispensary, regarding their weak eyes, and are often found to have marked retino-choroidal irritation, but they invariably have some anomaly of refraction or weakness of the converging muscles. Doubtless there have been in many cases other causes operating in its production, but

nevertheless the eyes would not have been the focus of irritation had not the refraction error existed before.

It is not my province here to discuss fully the method of its production by these refraction anomalies. Suffice it to say that the undue strain which is forced upon the ciliary muscle in maintaining distinct vision in astigmatism and hypermetropia, and the discord thus brought about between the accommodation and the convergence, both being under the same innervation, are quite sufficient to account for the trouble which follows protracted use of the eyes at near work.

In these cases the ciliary muscle is often found in a condition of nearly tonic contraction, or even cramp, which serves in hypermetropia to mask entirely the existing error, and in myopia to exaggerate by so much its degree. It leads myopes to select too strong glasses, and those suffering from hypermetropia to reject convex glasses entirely. These cases of refraction error, then, are by far the most frequent cause of retinal irritation. Do not forget that the cramped condition of the ciliary muscle gives rise to pain which will quite as frequently be referred to some of the other terminations of the third nerve as to the real seat of disturbance. As sources of irritation elsewhere in the economy may give rise to serious nervous symptoms, *e.g.*, the convulsions and diarrhœa of children during the eruption of the teeth, or a spurious strabismus from guests in the alimentary canal, etc., so here we would, *a priori*, anticipate the occurrence of other symptoms than the eye distress alone. Nothing is more frequent, gentlemen, than the occurrence of nausea and vomiting, associated with violent headache, due to the strain on the muscle of accommodation. Indeed, many of the cases suffering from periodical "*sick headache*" belong to this class, and never recover from their liability to these attacks until the cramp in the ciliary muscle, and the irritability of the retina and choroid, are relieved by the use of atropia and the subsequent correction by glasses of the refraction error.

Do not be deceived in these cases by the statement of your patient that "the eyes are always worse when the stomach is wrong." It would more frequently be correct to count from the other end of the chain, for you will find that these attacks follow extra use of the eyes or exposure to bright light, etc., etc. It is a good rule, in all cases of headache in which you are doubtful of its origin, to examine carefully the eye-ground, and at least exclude or prove the presence of refraction anomalies with hyperæmia of the retina, papilla, and choroid. It may happen, however, that the refraction error is a mere coincident, having nothing to do with the nerve trouble.

I recall now the case of a professional gentleman, who had for many weeks complained of pain in his head, from which he could get no permanent relief. Since it was aggravated by using his eyes in reading, he conceived the notion that it might be due to his eyes, and came to inquire of the matter. He had considerable degree of astigmatism, and marked fulness of the retinal veins, with slight haziness of the retina, and striation of the retinal fibres immediately surrounding the nerve. The vessels were bordered by a white line, and there were very delicate, glistening striæ, scattered over the eye-ground, running in all directions, so delicate as to be seen only with most careful focussing. The possibly dangerous portent of these appearances was at the time pointed out. Putting the ciliary muscle at rest, and smoked glasses to relieve the glare of the light, gave no relief. In ten days he had well-developed meningitis, in spite of treatment directed with this possible outcome in view, and the ophthalmoscope revealed pronounced neuro-retinitis.

The ophthalmoscope will be quite as useful in placing you upon your guard for approaching serious nerve disease as in verifying cerebral disease by the grosser changes in the papilla, *e.g.*, "choked disc." In order to study these finer changes in the retina and nerve, you must, of course, have in the first place thorough command of the ophthalmoscope, and be able to study the magnified upright image, and, secondly, an ever-present picture in your mind of the normal eye-ground.

In the treatment of these cases you will take special care to look after the general health of your patient. If the retinal symptoms are but a part of some malady of the nervous system, his treatment must be conducted accordingly. Where retinal irritation is present with refraction errors, however low they may be in degree, correct the error by a carefully-selected glass, the measurement being made while the eye

is thoroughly under the influence of atropia. In the treatment of irritable retinæ, whatever may be the cause, *rest*, as perfect as possible, is a very important element. The best—I believe the only—way to secure this is by paralysis of the accommodation by belladonna. Your patient will then be unable to read, and rest is in a measure enforced. More than this, however, atropia has the further advantage of being a very positive local sedative. Whatever may be its direct physiological action over the blood-vessels, one thing is certain, that under its action the hyperæmia of the retina and choroid very rapidly subsides.

The ophthalmoscope has repeatedly revealed to me very marked diminution in the size of the retinal veins, and the amount of capillarity of the optic nerve, in two or three days. The patient's sensations, also, are in accord with the improved appearance of the eye-ground. The headache and pain or fulness in the eye, and the pericorneal zone of injection, disappear. Although he is annoyed by the absence of his accommodation produced by the atropia, he nevertheless feels better. The flood of light admitted through the widely-dilated pupils is unpleasant, often painful, and should be excluded by a pair of smoked glasses. When the eyes have become comfortable and the hyperæmia has sufficiently subsided, correct any error of refraction which may be present, and then stop the atropia.

Alteratives have often seemed a useful adjunct to the local treatment. You will encounter much opposition to the use of atropia, and will be told of persons who have never seen so well since its use; but take these statements *cum grano salis*. The accommodation is recovered in from one to three weeks, even after the use of a solution of the sulphate of atropia gr. iv to f℥i, continued even for three or more months. I have repeatedly verified this statement. In a very large number of cases I have careful record of the range of accommodation and acuity of vision after its use, and in not a single instance have I had cause to regret its instillation.

1630 WALNUT STREET.

ACCORDING to the London *Lancet*, John P., aged five years, recently died in Manchester, England, of hydrophobia produced by the bite of a cat.

ORIGINAL COMMUNICATIONS.

HEREDITARY TRANSMISSION OF SYPHILIS.

BY L. K. BALDWIN, M.D.,
Physician to the Gynæcological Hospital.

ONE point which seems settled in the minds of those who have made a close study of the subject of syphilis is, that it may be transmitted to the offspring either through the condition of the ovule of a syphilitic mother, or through the semen of a syphilitic father, or from a combination of diseased states in both. It may also be transmitted through the blood of the mother, when she acquires the disease during gestation and thus infects the developing fœtus. But with such facts well established, we not unfrequently see children born of parents known to have had syphilis in the different stages, from primary to tertiary, show no signs of the disease at birth, and, it may be, not for a very long period after, and in some cases probably never. While the hereditary transmission of syphilis has been accepted as a fact since the sixteenth century, there were those who did not admit it. John Hunter would only admit that the fœtus in utero might become infected with a portion of the same poison which infects and is absorbed by the mother, but not that it was infected in consequence of the maternal disease, as he doubted that constitutional syphilis was infectious. Ricord, while sharing to some extent the views of Hunter, still admitted the transmissibility of the disease, but considered it the exception to the rule.

There may be cases where children are born with syphilis which they appear to have inherited, but have only been infected during the act of delivery, the mother suffering at the time from open syphilitic sores.

Jonathan Hutchinson* affirms that "when a wife is the subject of constitutional syphilis, and her husband healthy, there is a better chance that healthy offspring will eventually be produced than when the reverse is the case, since the father will remain without taint, and the mother's system will gradually eliminate it." The same author also states† that

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* Aph. XI., Syph. Dis. Eye and Ear.
† Aph. VIII., Syph. Dis. Eye and Ear.

when both parents are suffering from the disease, the child will be much more likely to be affected, and also that the disease will be likely to be more severe; but that cases have been known where both parents were suffering from the disease and yet produced healthy children. It seems a well-settled fact that the shorter the space of time since the infection, or the outbreak of the general symptoms, the severer the infection of the offspring. This rule will hold good, no doubt, in all cases, unless the affected parents become broken down through the influence of the disease, when children born later will most likely suffer the most. Zeissel mentions cases where syphilitic mothers have brought forth at one birth healthy children and at another syphilitic ones. Campbell cites a case where a syphilitic mother gave birth to twins, one dead and in a state of maceration, while the other appeared quite normal, but a few weeks later showed signs of syphilis, showing that both fœtuses were in different degrees affected. Boeck and Frankel both assert that if the father be healthy at the time of procreation, and the mother acquire syphilis during gestation, the child will escape infection unless the mother becomes syphilitic before the seventh month of pregnancy.

Whether syphilis is transmissible to the third generation is still an open question. A series of cases, indeed, recorded by Hutchinson in vol. ii. London Hospital Reports, seem to sustain the fact that such may be the case; but the statements made lead to a strong feeling of doubt.

The following cases, which have fallen under my own observation, will serve to bear out in many particulars the statements of the authors quoted above, especially that of Zeissel in regard to syphilitic mothers bringing forth at one birth healthy children and at another those infected with the disease. The first case is interesting on account of the number of pregnancies and the widely different condition of the children at birth.

Case I.—Mrs. B., a previously healthy woman, was infected with syphilis by her husband in 1865. She states that she had primary sores, followed in a short time by secondary eruptions, sore throat, periosteal inflammations, and the usual symptoms attendant on such cases. Soon after her infection she became pregnant, and was delivered in June, 1866, of a still-born child of seven months' gestation. Became pregnant again in 1868, and in December of that year gave birth to twins, both of whom she states bore evidence of the infection and died at the age of six weeks. She again in 1870 gave birth to a female child, which lived three months and died of "marasmus," which was, no doubt, induced by the syphilitic poison inherited from the parents. She applied to me in 1872 to be treated for secondary syphilis, being at that time several months advanced in pregnancy. She had sore throat, violent headaches, dirty sallow complexion, while her lower limbs were covered with deep, foul syphilitic ulcers. I placed her upon constitutional treatment for the infection, and a general course of tonics to build up her broken-down system. I soon had the pleasure of seeing a marked improvement in her condition, the ulcers gradually growing smaller, and the other symptoms yielding kindly to treatment.

She went on to the full period of gestation, and I delivered her of a healthy, well-developed male child, without a spot or blemish on his skin, or any other evidence of syphilitic taint. I have attended the family at intervals since the birth of the child alluded to, but have never seen anything in him to give rise to the suspicion that he has in any way inherited the infection. I saw him only yesterday, and he is in every respect a stout, healthy boy. I made an examination of his teeth, but failed to find the notched appearance so much spoken of in children born of syphilitic parents. In 1874, Mrs. B., after having gotten rid of the visible presence of syphilis in her own system, gave birth to a daughter, who is now, and has always been, a remarkably stout, healthy child. I also examined *her* yesterday, and found an entire absence of the characteristic marks of inherited syphilis. She has never been sick, nor has she during her whole life shown the least sign of an inherited taint.

Not disheartened by her former experience, Mrs. B., to celebrate the Centennial, tried it again, and in December of that year brought forth a boy. I was not in attendance, but have had ample opportunity of seeing the child ever since his birth. His mother assures me that he weighed ten pounds at birth, but soon commenced wasting away, and so rapidly did he fail that when three months old he weighed but four and a half pounds. I saw him during the *lean* period of his existence, and he presented the characteristic symptoms of constitutional syphilis in a most marked degree. He had the appearance of a prematurely old person, his skin being of a dirty orange color and much shrivelled. I thought it impossible for him to live any time, and did but little for him; when, to the surprise of all, he began picking up, and is now as stout and robust as any child of his age. His skin, although shrivelled and dried up, was clear of blotches and eruptions. I also examined *him* yesterday, and find him appar-

ently as clear of the signs of infection as the children noted above; but during the most of his life he has been subject to convulsions of an epileptic character, which may be occasioned by chronic arachnitis, or some other form of syphilitic disease of the brain. There has been no appearance of constitutional symptoms in either father or mother since the birth of the boy in 1872, whose case I have particularly described; but neither parent is in robust health.

Case II.—Mrs. P., a previously healthy woman, was infected by her husband in February, 1871. She states that she had a primary sore, followed in a few weeks by secondary symptoms, in the form of a rash which covered her entire body, and which remained for a period of nearly six months. She came under my notice in the early part of 1874, being at that time pregnant with her second child. After giving me her history, I examined her body, and found marks of where the eruption had existed as she had stated. I naturally felt anxious about the welfare of the product of the conception; but at the end of the seventh month she settled the matter by giving birth to a dead child bearing unmistakable evidence of the presence of the constitutional infection. She herself was at that time entirely clear of visible evidence of the disease. She remained well until January, 1876, when the latent poison again developed itself by an eruption over her arms, and extended in a less marked degree to her chest and other parts of her body. The eruption yielded kindly to treatment, and in less than two months had entirely disappeared. She again became pregnant in April, 1877, and in the sixth month of gestation her husband infected her again, a soft chancre appearing on the labia minora. By local applications, coupled with constitutional treatment, the primary sore soon healed, and no secondary symptoms made their appearance. If I was anxious about the welfare of the product of the conception in the first case, I was doubly anxious about the one now in utero; since it had the poison which the former had to contend with, plus a fresh invoice received during the sixth month of uterine life.

In spite of my gloomy forebodings and unfavorable prognostications, coupled with the anxiety of the parents (who well knew the gravity of the circumstances), she went on to full term, and gave birth to a fine, healthy male child, with a skin as pure and clean as though no taint had ever been seen in either parent. I have watched the child closely since its birth, the parents being very anxious for fear of some appearance of the disease, and have seen nothing to indicate that it has inherited the taint which was so prominently present in both father and mother both before and during the period of utero-gestation. I gave it a close examination yesterday, and consider it a remarkably well-nourished and healthy child, with a pure clear skin.

The two cases narrated here confirm very fully some of the aphorisms given by Hutchinson in his work on Syphilitic Diseases of the Eye and Ear.

The first also gives additional proof of the fact that constitutional syphilis does not prevent fertility even when both parents have been a long time affected. It also shows that a child born of a mother suffering from violent secondary symptoms during her pregnancy may show no signs of an inherited taint up to at least six years of age.

The second case shows that it is possible for a woman who has within a comparatively short period suffered from the secondary form of the disease, and during pregnancy from a primary attack, to give birth to a child which at its fifth month shows not the least sign of infection.

Notwithstanding authorities place very little reliance upon the efficacy of constitutional treatment in the prevention of the transmission of the disease to the offspring, my experience in the cases noted would seem to confirm the supposition that the treatment did exert a salutary influence, as the children born after treatment have suffered less than those born before.

1900 WALLACE STREET, June 4, 1878.

NOTES OF HOSPITAL PRACTICE.

PENNSYLVANIA HOSPITAL.

CLINIC OF DR. R. J. LEVIS,
Surgeon to the Hospital.
(Reported for the *Medical Times*.)

TREPHINING FOR FRACTURE OF THE LEFT PARIETAL BONE.

THIS man was struck on the head with a brick, which resulted in a depressed comminuted fracture of the parietal bone near its front border. None of the ordinary symptoms of concussion or compression of the brain are present. On examining the wound, which is about an inch in length, I find evidence of depression and comminution. The depression is considerable, but not driven down over a great surface. After administering ether to facilitate the investigation, an incision is made in the line of the wound, and the tissues are dissected up. If there are any detached fragments, they can be removed,

and if I can elevate the depressed portion of bone by the opening thus made, it will be unnecessary to trephine. The fragments are sharp and spiculated, and press down upon the dura mater, and if not soon removed will excite violent inflammation. This fracture partakes somewhat of the nature of a punctured fracture of the skull, and the danger to be feared is inflammation of the brain, rather than compression. The bone is so comminuted that by the use of the forceps quite a large piece of the outer table is removed, but the inner table still remains. It will be necessary to trephine in order to elevate the fragments perfectly, and to give the best chance to the patient.

The flaps are dissected up a little more, to give sufficient room, and the trephine is applied in such a situation as to avoid the vicinity of the middle meningeal artery, and must of course be applied upon a firm portion of bone. It is not necessary to take out an entire circle of bone, and therefore the instrument may overlap the margin of the fracture, but is held so that pressure is not made upon the fragments. The smaller the instrument the better, for all we desire is an opening which will allow us to use the elevator. The trephine, which is really a saw that cuts out a circular disk, is now rotated slowly from side to side, without any pressure being made upon it, but is kept in contact with the bone simply by its own weight. After a few turns have been made, the instrument is removed, and a small probe inserted into the groove to determine its depth. The skull seems to be cut through in this one place, though at no other point. It is important to remember this, for the skull is often thicker at one part than another, and one edge of the trephine might be cutting the membranes of the brain before the skull was perforated at the other edge. After you have made a groove, be sure to retract the centre-pin of the instrument. I work carefully now, and only saw on one side, because the bone is cut through at the opposite point, as shown before by the little probe. It is easy to regulate this by inclining the instrument to one side or the other. The disk is now loose, and is removed by the forceps. A number of fragments are found to be driven down upon the membranes, and the internal table is comminuted. The loose pieces are extracted, and then the elevator is inserted and the depressed portion of bone raised up. Finally I shall smooth the edges by means of the raspatory. In cases of this kind you will often find that one fragment is a sort of keystone to the rest, and much depends on the skill of the surgeon in applying his trephine in the most advantageous position. The wound after it has been thoroughly washed shall be dressed with carbolized lint. The man's head is to be elevated, and in a short time he shall be given a brisk cathartic to act as a revulsive; in addition, four or five drachms of bromide of potassium shall be administered in the next twenty-four hours. These measures are to prevent the occurrence of inflammation of the brain, which is liable to occur.

[Cerebritis supervened, and the patient died two days later, from this cause.]

RESECTION OF THE HEAD OF THE HUMERUS FOR CARIES.

This boy came to the hospital last month to be operated upon, but his health was so poor that I had to wait until he was in a better condition. I shall operate to-day. Examination shows a fistulous opening over the head of the right humerus, and on passing a probe through this track I come at once to dead bone. Upon the introduction of my finger into the opening, to break up the adhesions, pus and blood flow out. The case is one of caries of the head and surgical neck of the humerus, for which treatment of an operative kind is demanded. Resection of the head of the bone shall be performed. In this operation we first locate the acromion process, then make an incision vertically through the deltoid muscle down to the head of the bone. This gives drainage in a downward direction. The amount of diseased bone in this case is greater than was anticipated. After determining the line between the diseased and the living bone, I apply the saw. In such cases the chain saw is often used with advantage. The portion of bone removed is about two and a half inches in length, and shows that the upper part of the humerus was entirely denuded of periosteum. The bleeding from the sawn surface left proves that I have cut through living bone; some portions of the head of the bone still remain in the cavity, but they will be removed by means of the forceps. The structures in this region are very vascular, and much hemorrhage would have resulted if the assistant had not controlled the

axillary artery by means of compression. Ligatures are applied, and the wound dressed with carbolized oil. The effect of this excision will be shortening of the arm, and the formation of an artificial joint, but in time we may expect quite a useful limb. The incision through the deltoid in a vertical direction has left its fibres uninterfered with.

[A week later the boy was shown, improved in condition, on account of the removal of the pus and diseased bone; and after a month had elapsed he could raise the arm as high as the umbilicus. Passive motion was employed daily; and the change in his general health was astonishing, for he regained flesh and color with great rapidity after the diseased structures had been removed.]

CARIES OF THE ANKLE-JOINT—EXCISION OF THE ASTRAGALUS.

Five years ago this man sprained his ankle, which seems to have been the starting-point of his trouble. It probably set up an inflammation, and this has gone on from bad to worse, until the bones became involved in the disease. We have now undoubted evidence that there is caries or necrosis of the astragalus, and it may be that there exists a similar condition of the tibio-fibular articulation. The ankle is very much inflamed and swollen, and you notice numerous sinuses which lead down to the diseased bone and pass across the joint, making their exit upon the opposite side. As regards operation, it is probable that amputation would be the best course to pursue, but our patient will not consent to it; hence I shall remove the diseased portions of bone by excision. After etherization, Esmarch's elastic bandage is applied to control the circulation. There is little hope of saving any of the functions of the joint; so I shall make a free incision, cutting through the tendons and everything else that is in the way. The rule is to cut from one sinus to another. I shall commence the incision in front of the internal malleolus and sweep around nearly to the external malleolus, taking care not to begin so far back as to wound the posterior tibial artery. Disease of the astragalus is found, as was expected, and I therefore remove the entire bone. There is no disease of the other bones of the foot, and the articular extremities of the tibia and fibula are perfectly natural. The best result we can expect from the operation is bony union between the os calcis and the tibia, which will give the patient a very good foot. Only one vessel of any importance has been cut, which is the anterior tibial artery. No blood was lost, on account of the employment of the elastic bandage; but the arteries are allowed to spurt, now that the operation is completed, in order to show where to apply the ligatures. The dressing employed shall be charpie and carbolized oil.

[A week later it was reported that the patient was doing well, and that the wound gave him no pain of consequence.]

TRANSLATIONS.

PELLETIERINE, THE ALKALOID OF POMEGRANATE RIND.—Tanret, pharmaceutist, of Troyes, sends an account of this new alkaloid to the *Bulletin Général de Thérapeutique*, May 30, 1878. It is known that the fresh pomegranate rind possesses strong anthelminthic properties, while the same when dried is nearly or quite inert. The active principle must, therefore, be very alterable. Up to the present this has not been discovered, but Tanret now states that he has been able to obtain the alkaloid from both the root and stalk bark, as found in commerce, and he proposes to name it in honor of Pelletier, the chief investigator into the properties of alkaloids. The method of preparation is briefly as follows. The bark, roughly powdered, is moistened with milk of lime, and then placed in a vessel, and cold water is used for lixiviation. Three parts of the liquor are retained, and are agitated with chloroform, and the solution drawn off by proper apparatus. This chloroformic solution is then shaken up with dilute acid until the reaction is neutral or slightly acid. Thus a solution of chlorate, sulphate, etc., is obtained, according to the acid employed. This is evaporated in vacuo over sulphuric acid, in order to obtain the crystallized salt.

To isolate the alkaloid, the saline solution is treated with carbonate of potassium, and shaken up with ether or chloroform. The ethereal or chloroformic solution being distilled at a low temperature, the alkaloid is left as a residuum. A kilogramme of dried pomegranate root has by this method yielded Tanret nearly four grammes of sulphate of pelletierine. With

fresh rind no doubt a larger proportion could be obtained.

Pelletierine has an oleaginous consistency, and when obtained by evaporation in vacuo of the ethereal or chloroformic solutions is colorless. When obtained by distillation in the air, it has a light yellow color. It is soluble in water, alcohol, ether, and, above all, in chloroform. Its salts are very deliquescent.

Pelletierine is not poisonous. Tanret took fourteen centigrammes of the sulphate. His pulse fell to twenty per minute, within three-quarters of an hour; he experienced vertigo, lasting some ten minutes, not severe enough, however, to prevent his writing. No change of temperature was observed. Whether the alkaloid of pomegranate rind is as efficacious an anthelminthic as the latter itself remains to be seen, since Tanret has made no experiments in this direction. The process by which pelletierine is made is an easy one, and it might be advantageous to try the effect of a remedy which may probably prove more easily administered and more agreeable than the rind of pomegranate. x.

Tubercular Meningitis cured by Iodide of Potassium.—A man, 34 years of age, under the care of Prof. Peter, suffered from violent frontal cephalalgia, aggravated by light; eyes closed, pupils equal, strabismus, stiffness of the neck, constipation, some nausea, retention of urine, pulse 54, sighing respiration, very painful cramps in the limbs, meningitic stripe, continual complaints and groaning. Temperature, 98.6°. The summit of the right lung was evidently the seat of tubercular deposit. Within the next few days rapid emaciation set in. At the end of a week the patient was much worse, and indeed seemed in evident danger of death, when M. Peter placed him upon the use of thirty grains of iodide of potassium daily. From this time the patient rallied, and finally recovered so far that he was discharged from the hospital at the end of five weeks, the lung trouble, however, remaining the same.—*La France Méd.*, June 12, 1878. x.

Relative Value of Various Medicines in the Treatment of Diabetes.—Fürbringer (*Deutsches Archiv für Klin. Med.*, 1878, Bd. xxi. 5. und 6. Heft) gives the results of a series of experiments made upon several diabetic patients, to whom were administered from time to time various remedies which have recently been recommended in this affection. Salicylate of sodium and phenol were found of most service by Fürbringer, and their value in a given case seemed to be greatest when they diminished the excretion of nitrogen. When this effect failed, the hope of diminishing the excretion of sugar was small. Experiments with quinine, arsenious acid, pilocarpine, and benzoate of sodium, gave an unfavorable result, none of these having much effect in diminishing the excretion either of sugar or of nitrogen; the latter even increased it. Treatment of diabetes by thymol, oil of turpentine, digitalis, and bromide of potassium is contra-indicated. Digitalis does, indeed, seem to diminish the excretion of sugar and nitrogen, but it is by the disturbance of the digestive canal which it provokes, and which causes these products to be excreted by the intestines, and also less food to be taken. x.

Antagonistic Effect of Atropine and Pilocarpine.—Luchsinger (*Cbl. f Chirurgie*, 1878, No. 16; from *Pflüger's Archiv*) concludes from his experiments upon cats that a certain admixture of atropia with pilocarpine can abolish entirely the excitative effect of the latter. If, however, the proportion of pilocarpine be augmented, the paralyzing action of the atropia may be overcome. x.

Treatment of Cancer by Preparations of Guaco (G. v. Schmidt: *Cbl. f. Chirurgie*, 1878, No. 16; from *Wien. Med. Wochenschrift*).—There seems no reason *a priori* why some internal remedy may not be discovered which shall do for epithelial and other new growths what iodine does for syphilitic new formations. Dr. Schmidt suggests guaco, which he has used in the form of tincture and plaster. x.

Ulcera Klysmatica.—Köster (*Cbl. f. Med.*, p. 109, 1878; from *Deutsche Med. Wochens.*) alludes to a case of Von Recklinghausen's, in which an ulcer was observed in the rectum, two inches above the anus, the size of a quarter-dollar, non-inflammatory, perforating the coats of the intestine, and giving rise to peritonitis and death. The form and seat of this ulcer indicated traumatic origin, and Köster considered it due to the frequent use of an enema-syringe, the end of the nozzle of which just reached that point. K. also suggests that many anal fistulæ may owe their origin to this cause. x.

PHILADELPHIA
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PHILADELPHIA, AUGUST 17, 1878.

EDITORIAL.

WANGA PLANT AND VOUDOOISM.

SOME months since, noticing a paragraph in a foreign exchange stating that a powerful narcotic plant, unknown to science, was largely used in Hayti as an ordeal poison, the editor of this journal wrote to the government at Washington, asking that inquiries be made. Secretary Evarts very courteously and promptly wrote to the minister at Hayti, requesting an investigation, and the result is so interesting that the letter is here published, with the omission of certain non-essential details.

No. 65.

LEGATION OF THE UNITED STATES,
PORT-AU-PRINCE, HAYTI, June 24, 1878.

HONORABLE WILLIAM M. EVARTS, Secretary of State, Washington, U.S.A.

SIR,—Referring to your No. 12, of January 8 last, I have the honor to state that I have given the subject therein submitted, upon the letter of Professor Wood, due investigation.

The particular plant to which the name of "Wanga" is applied is not known by any one outside of the circle of the high functionaries, —the king, the queen, the papalois, and perhaps some of the more distinguished followers of the Voudoux. There can be no doubt that there is, among other things used by the king and queen, or priest and priestess as they are frequently called, at their initiations and at other times, as occasion may require, a plant of great narcotic power; and that those who use it have the best knowledge of the character and power of its properties, and how to make application of it so as to accomplish the effects which are desired. The testimony borne in this behalf is abundant and reliable; and it comes to the inquirer in forms and methods both curious and interesting. The more intelligent among the common people furnish entertainment by the hour in telling strange things which they witness as the effect of the manipulation of the plant by the waung, the priest, or papalois. And a like testimony is borne by authors who treat of this subject. In his excellent book, entitled "Description de la Partie Française de Saint-Domingue," Moreau, speaking of the Voudoux ceremony of initiation, as translated, says, "The king of the Voudoux makes a great circle with a substance which makes a black mark, and there places the one who is to be initiated, and puts in his hand a packet of herbs, horse-hair, pieces of iron, and other things as disgusting. Afterwards, striking him lightly upon the head with a little battledore of wood, he (the king) begins singing an African song, which those in the circle repeat in chorus; when the new member sets himself to trembling and dancing; this is what is called 'monter Voudoux.'"

But what the herbs are which the king uses, how they are compounded, what qualities they possess, whether they are the products of this country, and whether he uses more than one, are all matters of conjecture among the uninitiated.

The herb is used on other occasions as well as at initiations. Whenever miracles are to be wrought, the sick healed, the dead brought to life, or any display of power that is superhuman and calculated to strike the masses with awe is to be made, the herb is used. It is often told with the most profound sincerity and faith, even by those who declare that they do not belong to the Voudoux, that the papalois, a subordinate official of the sect, or even one of them of a still lower official grade, who is moved by what is called the "Lois," can and does resurrect the dead. But the herb always, according to their stories, plays its part in connection with such performances.

The "Lois," as I judge from the statements and explanations of those with whom I have talked on the subject, is a sort of spiritual influence or power, which is sometimes directly bestowed, but more generally inherited. It comes to the child from the parent or grandparent, and when once in the family never forsakes it, but abides forever, descending from mother or father to son or daughter.

The followers of this faith in this country are very numerous, including all grades of social life. It is generally believed that the Emperor Soulouque was a member. He certainly did nothing, unlike his successor Geffrard, to prevent the increase of its power or its cannibalism. It is well known that the Voudoux are eaters of human flesh, and to secure it do not hesitate to take human life, especially that of small children. With such victims they profess to make sacrifices to their strange god. In connection with these, too, the sacred herb, like the drum and other instruments so constantly used by them, figures conspicuously.

There are several considerations for concluding that the herbs which are used by the Voudoux grow in Hayti.

There is a plant, the product of this country, growing in great abundance, within the reach of those who desire it, whose properties

are well known, and which possesses remarkable narcotic power. This plant is often used here on account of its peculiarly narcotic properties, even by the ordinary Haytien not a member of the Voudoux, for medicinal purposes, as well as those that are lascivious and base.

In his work of rare merit, entitled "Flore des Antilles," Descourtilz in the third volume describes the *stramoine épineuse*, or Datura, and states, in connection with its natural history, that people believe in San Domingo, as he is assured by Colonel Deveux, that the discovery of its somniferous properties is due to a negro, who used it to put an old proprietor to sleep, to enable him to steal his bees.

He also tells the story of certain clever negresses who used the same plant to put the lover whom they did not prefer to sleep, while they stole to the embraces of him who was vanquisher.

The juice of the plant, as is well known, has been used not unfrequently to produce temporary blindness; and persons using it have been examined by the surgeons of the government and pronounced blind and unfit for military service, when, after its influence had passed away, the sight was restored, without the least deleterious effect having been produced upon the optic nerve.

Were one to visit the ordinary family of Hayti, and find himself, from fatigue or fear or anguish of mind, wakeful and restless, it is almost certain—if he let his condition be known—that he would be advised of the soporific effects of the datura, and leaves of the plant would be put under his pillow to make him sleep. Five leaves of this plant are said to be sufficient for ordinary cases, under such circumstances.

There are several varieties of this plant found in Hayti. Descourtilz mentions and describes three. In addition to the one already named, he gives the stramoine larmenteuse and the stramoine cormic, the three being described as toxic and bitter-narcotic. All three, in strange but natural combination, may be used by the king or papalois of the Voudoux. Or it may be the case that these are used in combination with other plants, the properties of which have not been made known to science. For I am advised that only six hundred of the two thousand varieties of plants in this country have been examined, classified, and their properties determined and defined. Upon this branch of the subject I have had several interviews with Dr. J. B. Delroux, who is altogether the most learned and scientific man of this republic. He informs me also that efforts will be made, though necessarily in a very imperfect way, through the chair of botany which has lately been established in connection with the medical college of this city, of which he is the president, to explore, to some extent, this field, which must be full of rich treasures for science.

But we may conclude that the stramoine épineuse is the main ingredient of the herbs used by the Voudoux, from the fact that it possesses the qualities, the properties, which work the result which the devotees of this strange religious fanaticism desire; and in this particular species of the plant these peculiar properties are more largely found than in either of the others. Descourtilz, in describing its properties, says,—

"Others mix them with tobacco. These grains, pernicious to man as it is said, have a property for fattening hogs by causing them to sleep a great deal."

In speaking of it in another connection, he says,—

"This plant, a native of America, is found in all the sandy fields of Europe, where it is perfectly naturalized. The magicians, or pretended sorcerers of the colonies, procured for their sick, in the use of this plant, that species of voluptuous enthusiasm which made them forget, during some instants, the afflictions which oppressed them."

But it must be recollected that it is in the tropics that this plant grows with its greatest vigor and develops its properties in full power. Here, it is a thrifty, handsome plant, with a strong odor and remarkable narcotic power. The same species of plant, known as the "Jamestown weed," was formerly found in the States; and in the early settlement of Ohio and other parts of the West it grew quite thriftily; but not as it does here. Its leaf, blossom, and fruit, as well as limb and trunk, show that here its roots find the sweetest and most natural nourishment.

Everything connected with the Voudoux service, the serpent, the herbs, the horse-hair, the pieces of horn, as well as the drum, the song, and the circle, have thrown about them a solemn mystery and are held in their sacred uses and effects as profound secrets. Everything is done, the initiation-oath is given and taken, with this object.

All that is said, therefore, with regard to this subject, as already stated, is said upon conjecture. It may have truth in it, it may not.

With sentiments of high regard, I am, sir,
Your most obedient servant,
JOHN MERCER LANGSTON.

UNILATERAL PAROXYSM OF MALARIAL FEVER.—A very extraordinary case of intermittent fever is reported (*Virginia Medical Monthly*, July, 1878) by Dr. M. Lewis, in which the febrile paroxysm was at times almost confined to the right side, the right axilla having a temperature of 104° F., the left of 100⅘° F., and the skin of the right side sweating profusely, whilst that of the left side remained dry.

CORRESPONDENCE.

LONDON LETTER.

THE medical profession is in unison with the bulk of the West-End tradesmen on the subject that this has been a very poor season,—a matter which comes home in a very practical fashion when the subject of the annual holiday is being discussed. It is astonishing how sickness apparently is influenced by circumstances. People do not seem to be so conscious of their ailments, or so anxious about their sensations, when money is tight; while good commercial times seem to confer a sort of hyperæsthesia upon humanity, an assiduous investigation of their subjective sensations, with consequent mental perturbation only to be allayed by medical consultations at high prices. When the benumbing touch of money-tightness comes close to them, its effects are felt to be the allaying of sensitive or hypersensitive feelings, and the rule of calm consideration of their maladies. Just as country practitioners will tell you they are never busy during hay-time and harvest,—a simple matter of fact, well known: the people in the country are too busy to be ill. Or, again, in neighborhoods where the doctor goes without the holiday now so universally practised, and his patients are accustomed to see him and nobody else, when at last he does go away nobody almost is ill till he comes back. If some philosopher who amidst this busy age has a little leisure time could study the subject intimately and with satisfactory results, then we might ask him to proceed to the investigation of the fact —or apparent fact, anyhow—that the action of remedial agents does seem to be influenced not only by the enthusiasm, or want of enthusiasm, of the prescriber, but even by the therapeutic theories by which he is guided in administering the agent. This is a mysterious subject, on which the last word has by no means been said, nor, I fear, is it likely to be said in the lifetime of the present generation. Is it possible that the confidence of the practitioner in his remedy communicates itself to the recipient, and this "expectation" adds to the natural potency of the drug? Take most agents, say salicylic acid, for instance, which as an agent but very recently employed on a large scale has had the advantage of the most recent methods of investigation, as means of explaining its *modus operandi*, and what do we find? The greatest possible diversity of opinion as to its effects; one extoling it above everything for the treatment of acute rheumatism, while another says it has signally failed in his hands, and none, either advocates or dissentients, venture to suggest how it achieves its ends, when its administration is followed by the most striking results, to all appearance, too, distinctly as consequences of its use. Such varied, diverse, and even contradictory results baffle all human ingenuity to account for them, and leave one to the shadowy impression that after all there is and must be something which modifies the physical action of remedies,—a conclusion in which neither scientific culture nor common sense can participate.

The Hospital Sunday Fund does not increase, but on the other hand shows visible decrease, very unfortunately. The contributions of the last three years have fallen below those of the two first years of this fund in London. The great success which attended the establishment of a hospital Sunday collection in several of the large provincial towns, and very notably in Birmingham, at length led to the attempt being made in the metropolis. The thing was launched most favorably; the highest civic authorities—the Lord Mayor himself, indeed—presided over the organization and the distribution of the funds so obtained; preachers of all kinds, from her Majesty's chaplains to the less distinguished dissenters, entered eagerly into the matter; congregations vied with each other in friendly rivalry as to which should stand at the head of the subscription-lists; and as a consequence nearly thirty thousand pounds were subscribed on the first Sunday. Then came the distribution of the money, and discord followed. It was determined, wisely enough, that the amount granted to each institution should be in proportion not merely to its size and its wants, but also to the economy with which it was administered. This last was a severe test, which some institutions bore very imperfectly. Then there was a rule to the effect that no grant should be made to any institution which was not managed by a committee duly constituted. This was an excellent rule, which might well have been adhered to. Then another rule provided that in no case shall a grant be reduced or withheld until a conference shall have been sought with the managing committee; a rule to which no exception can be taken. Yet confusion has been the consequence of the attempt to do equitable justice to the different charitable institutions entitled to participate in the benefits of this fund. The well-known Golden Square Hospital for Diseases of the Throat, under the practical administration of a well-known physician, somehow did not receive as much as it thought it was entitled to from the fund, and much controversy and open battle went on betwixt its medical head and an ex Lord Mayor. This year it is found that the grant awarded previously to this hospital has been withheld without any conference with the committee of management being either sought or accepted. It is quite true that the investigation into this charity recently, when the Prince of Wales withdrew his patronage from it, and the stubborn refusal of the authorities impugned to publish the whole investigation and let the

public have an opportunity to judge on the matter, when repeatedly invited to do so, may have done much to influence this decision. But still the distributers of this fund have no truly judicial standing, and whatever may be their impression that substantial justice may have been done by their action, still they ought to be guided by and adhere to their own rules: else what confidence can the public have in their administration? When influence is brought to bear on decisions, no matter by whom or for what object, confidence in the administrative body is shaken. If they have rules, they should keep them; if the rules are objectionable, they should be modified; but as long as rules stand they ought certainly to be kept. This, at least, seems a common-sense view of the subject.

Then, again, this year a large grant has been awarded to a hospital for chronic and incurable cases, which, however meritorious or deserving, is not managed by a committee at all: here a flagrant breach of an important rule has been perpetrated. It appears, then, that the committee of distribution has got some secret rules by which their openly recognized rules are modified or even put in abeyance, and about these inner regulations the outer world knows nothing. It further appears that there are some "vague and undefined things called 'merits' and 'pecuniary needs' on which the awards have been made." But this mystery, though inquired about, has not yet been penetrated, and the public is very likely all the more inclined to button up its pockets next year, and give less and withhold more, to the detriment of the general fund, and then forget to subscribe the balance in some other way, and then the charitable institutions of London will suffer for the acts of the distributing committee. As to who these persons are by whom these offences come, is not generally known,—very probably some of the numerous busybodies who obstruct and mar all good work by their obtrusive aid and participation. Incompetence is rarely accompanied by a modest sense of its capacity, or, rather, the lack of it. And intrigue worked even to do what may be substantially just, is a bad method of attaining an end: after all, it is but a form of conspiracy.

London already possesses seventeen general hospitals, fifty-two special hospitals, forty general and special dispensaries, together with forty-six Poor-Law dispensaries, and the cry is "yet they come." This month has witnessed the inauguration of a new hospital, with a no less distinguished personage than the amiable Princess of Wales as its patron. It is entitled the "West London Hospital for Paralyzed and Epileptic Patients," and starts with a very distinguished staff. Drs. Lockhart Clarke, William Broadbent, and J. Crichton Browne are its physicians; Callender is its surgeon; Greenhalgh its obstetric physician; and Lennox Browne its throat and aural surgeon. Such a team ought to run a good hospital in time; but at first sight it does not seem very apparent why such a portentous infant should suddenly put itself in rivalry with the already existing institutions,—the National Hospital for the Paralyzed and Epileptic, in Queen Square, where there are Ramskill, Ratcliffe, Hughlings Jackson, Buzzard, Bastian, and Gowers; or the Regent's Park Hospital for Epilepsy and Paralysis, where there are Althaus, Meryon, Hughes Bennett, and Ferrier, and where Lockhart Clarke was, and possibly is yet, a member of the staff. It has been asserted that the diseases of the nervous system are on the increase, and the assertion seems indeed well founded; and this last aspirant for public favor testifies to the growth of such opinion, as well as to the further fact of belief in studying such disease and the attempt to treat it.

Therapeutics, indeed, are the coming wave in medical opinion, and the interest of pathological research and physiological investigation is joining with clinical zeal and carrying us beyond the mere recognition of disease to the further subject of its scientific and rational treatment. Attention has been called of late to the work of Surgeon A. R. Hall in connection with cholera. Extensive experience of it, including an attack personally, brought him to the conclusion that the pathology is that of spasm of the smaller arteries and arterioles, with fulness of the veins, and squeezing out of the serous portion of the blood from the venules of the intestinal canal. The character of the pulse and the complete suppression of urine, the cold extremities and the generally gelid condition, bore out such a view. Being possessed of such an interpretation of its pathology, Mr. Hall rationally concluded that some vascular depressant would be more likely to be serviceable in the relief of the condition than the measures hitherto adopted. He decided to try the subcutaneous injection of chloral, with such success that he brought the subject before the London societies. But, fortunately, of recent years cholera has been but a subject of scientific interest to English practitioners, and little interest was awakened by these new views. It is in the East, and notably in British India, that the practical interest in cholera is centred. From information privately received, Mr. Hall has had further opportunities of pursuing his practice, with very gratifying results. As is well known, when cholera is on the decline, no trustworthy observations can be made: if a line of practice is to be fairly tested, it must be at the commencement of an outbreak, when the terrible malady is on the rise. Placed at Gwalior, the case which occurred there got well; but at Morar, some four miles away, the outbreak was severe. Every case had either died or was dying, according to the admission

of the surgeon in charge. At this time no less than twenty-three had died. In the hospital were other nine, of whom four were decidedly moribund and beyond the possibility of any hope. Five were still potentially alive. To these chloral was given by injection in a solution of one part to ten of water, and from nine to twelve and up to eighteen grains of chloral were injected, and repeated as required according to the exigencies of each case. (What these exigencies were, and the indications of each case, will be forthcoming when the report is made; at present but the general outline is available.) Of these five, four were well at the date of the letter; one died after two days of uræmic poisoning, "reaction never being established." The previous treatment had consisted of chalk and opium, *per secundum artem*, and in some cases the hypodermic injection of morphia had been practised and stimulants had been co-administered. After this, six other cholera patients came into hospital, and of these, treated on the above plan, five completely recovered. The other man was a hard drinker; but in his case even all symptoms of cholera had ceased, and he was passing semi-solid stools, when low delirium set in, and he succumbed. On post-mortem examination, he was found to have his heart in a state of fatty degeneration, and the lungs and kidneys were congested. Thus, of six treated with chloral from the commencement five returned to duty; of five handed over and to whom the chloral was then given, four are quite well. A woman who was brought in after the heart-sounds had ceased to be perceptible, and injected with chloral, and who had previously been actively treated with rum and chlorodyne, died in convulsions in ten hours; but here there was a certain amount of reaction established, and the temperature rose to 100°. Two children to whom chloral was not given died forthwith. Of the cases which recovered, one man had total suppression of urine for more than one hundred hours, while another had almost complete suppression for over ninety hours and was comatose for two days. Yet these two men completely recovered. Such success certainly demands that further trials should be made and the plan be thoroughly tested. If it is found to be a step in the right direction, the terrible seriousness of cholera will cause it to be hailed with satisfaction; if after all it be but one of the multitudinous false hopes entertained, the sooner its pretences to professional confidence are abolished the better. But enough has now been done to demonstrate that the plan is worthy of being investigated on a large scale; and also, from what was said in the early part of this letter, it is desirable that the plan be tried by other practitioners, always provided that they follow out the instructions and the method in its entirety, so as to give it the fullest and fairest trial possible. Of the outbreak in and around Morar, of fifty-one Britishers attacked no less than thirty-six cases proved fatal; of a detachment of native infantry, three hundred and twenty-one strong, no less than one hundred and nine were attacked, and of these fifty-five died. This will furnish some estimate of the virulence of the outbreak. Certainly Mr. Hall is to be congratulated on his good fortune, even if it ultimately turns out that his success was a coincidence and not a consequence of his treatment.

Those of your readers who have perused the recent lectures on ovarian disease and its treatment, delivered by Mr. Spencer Wells before the Royal College of Surgeons, must have been struck with their power and the vivid description of the different steps of ovariotomy furnished thereby. The history of the different steps, and the gradual development of the various improvements, were briefly given, and stress was laid upon the measures at present in use. The value of tapping was lucidly put, and indeed the whole subject was handled by a master mind. But if there was one matter which impressed the reader more than another it was the grim frankness with which Mr. Wells admitted various mistakes and mishaps that had occurred to him during his experience of ovariotomy. Fibrous tumors and fibro-cystic tumors of the uterus, the spleen, and other things, had been cut down on for ovarian tumors. A number of operations had been incomplete, and had not been proceeded with. But this is not all. Few men are in the position that Mr. Wells occupies, or could afford to confess what he revealed the other day. On one occasion a sponge was forgotten in a woman's abdomen. The nurse counted the sponges,—they were all there. There were no misgivings, and the operation was completed and the patient put to bed. Some hours after this the nurse came to say that a sponge was missing,—"a sponge she knew." It was undoubtedly in the abdominal cavity of the patient, who was comfortable until the early morning, when she became restless and feverish. Under the pretext of altering the dressings, the wound was opened, and the sponge was found immediately under the wound, where it was *not* at the finish of the operation, having been moved there by the action of the intestines. Fortunately the case did well. At another time a sponge was missing, and after an elaborate exploration of the abdomen could not be found there. Still, it could not be found elsewhere: so the search amidst the viscera was recommenced. At last the sponge was found at the back of the liver, betwixt the liver and the diaphragm, and removed. How ever it could have found its way there is unknown; but it had got there, and well it was that it was discovered and removed, as the result could scarcely have been satisfactory with a sponge located there. Mr. Wells now uses

sponges of medium size,—not too big to be passed through the wound, and not so small as possibly to be forgotten. He also has them most carefully counted before and after the operation. Not sponges only, but other things that are required for ovariotomy have been left in the patient. Once a pair of forceps were missing. Search was made; but there was no alternative, those forceps were within the patient's abdominal walls. Again all at first seemed well; but the patient got uneasy before morning. The wound was opened, and the forceps were found "folded up in the omentum." This patient also fortunately recovered completely. Mr. Wells's magnificent success makes it possible for him to relate and criticise his own experience for the benefit and instruction of others.

J. MILNER FOTHERGILL.

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, APRIL 25, 1878.

THE PRESIDENT, Dr. H. LENOX HODGE, in the chair.

Conclusions of a Paper on the Causal Lesions of Puerperal Eclampsia. Presented by JAMES TYSON, M.D.*

IT might be anticipated that I approach hesitatingly to conclude upon a subject on which the results of observation are so various, and on which so many better qualified have thought carefully and expressed themselves so diversely. The following conclusions I have, however, reached:

First. There are no reasons why we should exclude from the causes of convulsions in the puerperal state those which operate to produce convulsions in the non-puerperal condition. This more particularly when we admit, as I think all must, that, let the cause be what it may, the nervous centres of the pregnant woman are generally hypersensitive, and therefore more ready to respond to peripheral stimulus—irritation of any kind—than are the nerve-centres of non-pregnant women; and this may be increased by the pressures and congestions incident to labor. This being admitted, any such peripheral irritation as the pressure of a child's head upon a rigid os, like the pressure of a tooth upon a child's gum, may excite a convulsion; or the irritation of uterine nerves compressed during muscular contraction, or emotion, whether pleasurable or painful, distress, anxiety,—all may excite a convulsion. And it is not impossible that such a convulsion may be fatal, as it is not impossible that such a convulsion may be fatal in the non-pregnant woman. But such a result is indeed rare, and convulsions from these causes are not generally serious. They occur most often in primiparæ, where the labor has been long and painful.

But may such convulsions as these occur after delivery, when the irritation has apparently subsided? I believe they may. For, in the first place, the irritation does not necessarily cease with the termination of the labor. The sting of the lash by no means ceases with the cessation of its strokes. And, in the second place, we know that some time is often required after the operation of a peripheral irritant through a nerve upon a nerve-centre before the latter responds. It would seem as though some time must elapse before the requisite impulse can be generated in the ganglion cells to produce an explosion the resultant of which is a convulsion. Such I believe to be the nature of the convulsive attacks in most cases reported, where there is no albuminuria before the attack, and but little after it.

Second. A certain number of cases of convulsions which may be called puerperal *possibly* originate from extreme post-partum hemorrhage, from the anæmia which thus results in the spinal cord and its cranial prolongations, the medulla oblongata and tubercula quadrigemina.

Third. I think it not impossible, even, that puerperal convulsions may be caused by the congestion to which these same centres are subjected in a hard labor, as is evidenced by the red face, the protruding eyeballs, and headache, often agonizing during a pain, which the muscular effort produces. The number of these—the congestive or apoplectic cases of the oldest authors—has, however, in the admission of all, been reduced to a minimum by the subtraction from them of the cases of reflex convulsions just referred to in my first category.

Fourth. Outside of these categories, in which I would include a limited number of comparatively harmless cases and a smaller number of more serious ones, I would assign the causal lesion of puerperal eclampsia to be Bright's disease of the kidneys. The Bright's disease which I believe to underlie the large majority of serious cases of puerperal convulsions may either be present at the time the woman becomes pregnant, have preceded the pregnancy, or it may be acquired during the pregnancy. In the former case, as Dr. Barnes has said (*loc. citat.*), "the pregnancy does not mend matters," and the tendency, at least, is, by reason of the pressures and congestions naturally present in pregnancy, further to interfere with the elimination of excrementitious matters, whose secretion is already embarrassed by the renal lesion, independent of any addition thereto from the pregnant state. And yet it is a fact observed by very many, that such persons by no means necessarily have convulsions before, during, or after

* The entire paper on which these conclusions are based will be published in the Transactions of the Society for the session 1877-78.

labor, especially if they are multiparæ. This is unquestionably due to the accommodation or balance which we know to be set up in different parts of an economy where another becomes gradually involved in disease. We all know how different are the results of gradual and sudden brain-lesions,—how the former may advance to an extreme degree without giving symptomatic evidence of their existence, and how serious are the consequences of even slight degrees of the latter. But we must at least admit the pregnant woman with pre-existing Bright's disease to be in the same danger of convulsions as the woman with Bright's disease who is not pregnant, and it is not unreasonable to suppose that the danger of the former is somewhat greater than that of the latter, and in cases of primiparæ very much greater. And thus are caused some cases of puerperal convulsions. In these cases the form of Bright's disease may be any one of those to which all are subject.

In the second series,—where the disease is *acquired*,—it is almost invariably catarrhal nephritis (parenchymatous nephritis, or tubal nephritis), of which the typical example is seen in the Bright's disease concurrent or sequel to scarlet fever.

This conclusion—that most cases of puerperal convulsions are caused by Bright's disease—is justified by the fact that these cases are almost invariably accompanied by *albuminuria*, and, where a microscopic examination of the urine is made, by *tube-casts;* that a very large number are also attended by œdema; and that where they terminate fatally, the autopsy generally reveals disease of the kidneys. In confirmation of this, while referring generally to the cases reported in the past pages, I desire to call your attention particularly to an analysis of the series of cases, one of the largest on record, as well as one of the most accurate,—the microscopic and chemical examinations being often made by Prof. Flint, Jr., and that of the kidneys often by Prof. Alonzo Clark, of New York,—reported by the late Prof. Elliot, in his Obstetric Clinic (1868), pp. 101 to 126. The list includes fifty-one cases of albuminuria and eclampsia, of which six have no exact bearing upon the subject. Eleven are cases of kidney disease, with albuminuria, during pregnancy and parturition, not associated with convulsions, thus leaving for consideration thirty-four cases of eclampsia. In four out of these thirty-four cases eclampsia was not associated with albuminuria, nor were any tube-casts in the urine. Of the thirty cases in which the albuminuria and eclampsia co-existed, fourteen recovered and sixteen died. Autopsies were made only in seven cases, with the following result: *Case* 3. One kidney in a state of advanced Bright's disease, and the other perfectly healthy. *Case* 5. Advanced Bright's disease (large white kidney). *Case* 11. Well-marked Bright's disease. *Case* 13. Fatty kidney. *Case* 34. Kidney enlarged and congested, but not changed in structure. *Case* 36. Kidney large, white, congested; weight of the two, thirteen ounces, and, under the microscope, granular degeneration. *Case* 47. Although albuminuria, œdema, no symptoms of uræmia; there was no convulsion until the next day after labor; coma supervened immediately after the convulsion, and she died the next day, forty-two hours after delivery. At the autopsy, "the kidneys weighed four and a half ounces, and were healthy under the microscope." Both lateral ventricles of the brain were filled with bloody serum; the third ventricle contained serum and a small clot; and the fourth was filled with clotted blood. The vessels of the neighborhood were examined by Prof. A. Flint, Jr., and found to be atheromatous.

The notes on the four cases of eclampsia referred to above, which were not associated with albuminuria, are as follows: *Case* 8. Has had three miscarriages; there was œdema of the face and upper extremities; secretion of urine normal in quantity, and no albumen present; no microscopic examination of the urine was made; eclampsia; child putrid; death of the mother; no autopsy. *Case* 19. Ninth confinement; no albumen, but great quantities of urate of ammonium, some urate of sodium, and bile; eclampsia; mother and child livid. *Case* 30. Primipara; no albuminuria; only two convulsions; recovery. *Case* 39. Primipara; eclampsia after delivery; only three convulsions; no loss of consciousness; no albumen; recovery.

Of the eleven albuminous pregnant women referred to in whom no convulsions occurred, only five recovered, and six died during or after delivery. Autopsies were made in three only, and in *each was found advanced renal lesion.*

Now, as to Elliot's case 47, where there was albuminuria, œdema, a physiological confinement, a convulsion the next day, followed by coma, which continued until death, and the post-mortem revealed the *kidney weighing four and a half ounces, but healthy under the microscope*, there were, however, brain-lesions, including a small clot on one of the ventricles, and the fourth ventricle filled with clotted blood. The vessels in the neighborhood were examined by Dr. A. Flint, Jr., and found *markedly atheromatous.* It is not stated whether the kidneys singly weighed four and a half ounces or jointly; most probably the latter is intended; but in either event they would seem small. *They were not examined microscopically.* The vessels of the brain were atheromatous, and death occurred by rupture of one of them. Were these not, then, cirrhotic kidneys, attending which we constantly have atheroma of the vessels of the brain, and death by apoplexy?

As to the remaining four cases in which there was no albuminuria, it will be observed that in one there was a putrid child, and no examination of the urine seems to have been

made after the convulsions set in, and no microscopic examination at any time; no autopsy. There may still have been Bright's disease, or the convulsions may have been due to the absorption of septic matter from the putrid child. The remaining three cases were mild cases, and may be placed in my first category.

Again, take the three cases of Prof. Barker, alluded to under the abstract of his views. In two of the three, Prof. Barker acknowledges Bright's disease, and in one of these the diagnosis was confirmed by a post-mortem examination, in which the kidneys were found very much diseased. In the third case there was no albumen in the urine drawn from the bladder after she had had one fit, and again after she had had fifteen at least, recurring at intervals of five or ten minutes, and being profoundly comatose in the intervals. Premature labor was induced, but she died after further convulsions. At the post-mortem examination there were two ounces of serum in the cavity and lateral ventricles of the brain, and the cerebral vessels were congested, but the kidneys were pronounced by Dr. Alonzo Clark "slightly congested, but in other respects perfectly healthy." Here, then, is a case of severity, in which there is no albuminuria, and no renal lesions are discoverable after death. These are, at most, not very numerous. They may be slightly reduced by cases of the kind included in the first category, in which, without appreciable lesion, death occurs, just as it sometimes occurs by convulsions in non-puerperal women without any discoverable lesion; and it is not impossible that this one of Prof. Barker's, which I confess is the most striking I have met, may be of this number, especially as the case was one of peculiar distress,—that of a young woman of evident refinement and education, who had wandered from her home, several hundred miles distant, and, friendless in a large city, was compelled to make her bed on a door-step, whence she was taken roughly to a police-station, in which she had her first fit. Certainly, if circumstances of this kind are ever sufficient to excite convulsions, these are such. But I believe the number may be still further reduced, when we remember the imperfect character of the examinations both of the urine and the kidneys. Those only of us who have had experience in hospitals know how carelessly and hastily these examinations are often made. And in the examination of the kidneys themselves the liability to error is still greater. I hold that almost never is a naked-eye examination of a kidney sufficient to justify an assertion that it is not diseased, and especially when the naked-eye examination reveals "congestion." The microscope should always be used in these cases. For this very congestion obscures more delicate changes, so as to make them undistinguishable without the microscope, and the microscope used intelligently. And, further, can we assign a limit to the mischief of a simple congestion in a kidney, especially if that congestion be suddenly induced? Finally, if it is remembered that experience often shows temporary absence of albumen in some cases of chronic Bright's disease, and that cases have even been reported with albuminuria, dropsy, uræmia, and death after scarlet fever, and yet the autopsy discovers no lesion in the kidneys,—when all these matters are considered, *I cannot but think that the number of serious cases of puerperal eclampsia which cannot be attributed to some form of Bright's disease is small.*

If I am asked whether I think it impossible that a convulsion should cause albuminuria, I answer, By no means. On the other hand, we not only have every anatomical reason for supposing this possible, when we recall the increased vascular pressure which must result from a convulsion, but we have also clinical evidence to this effect in the results of the examination of the urine of epileptics immediately after a fit, by Huppert (*Virchow's Archiv*, vol. lix.) and others, who found albumen in many such cases; but the peculiarity here is that the *quantity of albumen is always trifling*, unless the cases are complicated with renal disease; whereas the albuminuria of the puerperal state, at the period of convulsions at least, is very marked. But it is not impossible therefore for the milder cases of puerperal eclampsia due to reflex irritation thus to acquire a small albuminuria during the convulsions where previously none was present. Against this we should, however, guard. But the very circumstance makes it likely that a large albuminuria is due to a more decided alteration of the structure of the kidney than the mere congestive condition which is the cause of a small one.

Now as to the *cause of these renal changes* which lie at the bottom of so large a number of cases of puerperal eclampsia. How are they induced? Two views are held, by as many sets of observers, as will be recalled from the abstracts presented. One, held by Frerichs, Braun, Litzmann, Scanzoni, and others, attributes them altogether to pressure upon the emulgent veins, caused by the pressure of the pregnant uterus, producing congestion, albuminuria, and imperfect elimination of matters usually thrown off by the kidneys. This view is favored by the fact that albuminuria and eclampsia are most common in primiparæ, and in multiparæ with twin pregnancies, hydramnos, deformed pelvis, or other condition which increases the intra-abdominal pressure. On the other hand, it is objected to this view that albuminuria very early in pregnancies, some instances of which have been observed within two months after conception, cannot be thus accounted for. And it will be recollected that Bartels, in

his article on the "Parenchymatous Nephritis of Pregnancy," in Ziemssen's "Cyclopædia of Medicine," attempts to prove the anatomical impossibility of such pressure, while he claims also that congestion of this kind should be followed by interstitial nephritis instead of catarrhal nephritis, the conditions being similar to those in mitral disease of the heart, in which, from venous pressure, the blood is backed into the kidney and liver, in both of which is found the hard kidney of an interstitial nephritis.

Those who believe in the pressure theory attribute the albuminurias of early pregnancy to pre-existing renal disease,—which is not impossible.

The opposite party ascribe the parenchymatous nephritis to an intoxication of the blood, due to the increased amount of excrementitious matter which must enter it from the retrograde metamorphosis of the tissues of the fœtus, as well as of the mother; and consider its operation to be like that of the poison of scarlatina, which similarly induces a catarrhal nephritis. The reasons for this view are well given by Dr. Peter in the lecture already quoted, and I need only refer you to them.

I think the mistake consists in the adoption of either view to the exclusion of the other. Doubtless both contribute to it in varying proportions, according as circumstances favor the operation of one or the other. Certainly the greater frequency of the eclampsia in primiparæ, and the other situations above named, can only be accounted for on the pressure theory; while the force of Bartels's argument cannot be denied.

It must not be forgotten, as stated at the outset, that the pregnant woman is liable to acquire Bright's disease from the ordinary exciting causes of renal diseases,—exposure to cold and wet, excessive eating and drinking, or the absorption of some zymotic blood-poison; or even from absorption of septic matters, possibly from a putrid fœtus or morbid material from the interior of a partially-contracted uterus. These causes are all well tabulated by Dr. Johnson in the extract from his lectures.

Now, as to the toxic agent itself in those cases of puerperal convulsions due to Bright's disease, I doubt whether it comes properly within my task to discuss it to-night. But a very few words will dispose of it. It is very true that in a few instances only has an excess of urea been demonstrated in the blood of puerperal eclamptics. It has, however, been unmistakably shown to be present in some. Frerichs, it is well known, sought to prove that it was not urea, but carbonate of ammonium into which the urea was converted, and both Prof. Hammond, of this country, and Dr. B. W. Richardson, of London, have ably refuted it, although Spiegelberg has recently reasserted the original view of Frerichs, based on a series of experiments conducted by himself and Heidenhain (*London Lancet*, 1870). Hammond and others have also proven that the urine itself is a much more efficient agent in producing the symptoms of the so-called uræmia; and there is little doubt in my mind that it is not urea, or carbonate of ammonium, or any single substance, but it is the entire mass of excrementitious substances usually eliminated by the kidneys which, retained in the blood, give rise to the uræmic symptoms of Bright's disease, and of those cases of puerperal eclampsia depending on Bright's disease.

If it be asked how it happens, on the supposition of so grave a disease as parenchymatous nephritis, that recovery is ordinarily so rapid when labor has successfully terminated, the answer is again easy. Let it be remembered that we have ordinarily a case of catarrhal nephritis of short duration intensified by embarrassed circulation, if not primarily caused by it. This cause removed, the blood moves freely, the kidneys act rapidly, the quantity of urine is largely increased, and with it the excrementitious matter. The convalescence is therefore rapid. It is, however, no less so, and the case differs, indeed, in no way from that in catarrhal nephritis after scarlatina, where the toxic agent has not operated for so long a time or so virulently as to produce chronic changes. And it is well known that the earlier the symptoms appear, and the longer the disease has lasted before relief comes, and therefore the more deep-seated the lesions, the longer the albuminuria and the casts continue afterwards; while in a certain class of cases these symptoms continue, the relief does not come, the disease becomes chronic.

Dr. ALBERT H. SMITH said that Dr. Tyson's paper was so complete and exhaustive of the whole subject that it left scarcely room for discussion. He fully agreed with the views expressed in the paper and the conclusions arrived at; even going further than the author, in stating that, so far as his experience had gone, he felt justified in adopting the belief that all *genuine* puerperal convulsions are the result of renal disease. He would divide the convulsive seizures arising in pregnancy into two classes,—those from hysterical and those from renal causes; the former so easily distinguished from the latter in the character of the spasmodic movements in the facial expression, and in the partial consciousness and appreciation of surrounding conditions, as to leave no question as to their true nature. Convulsions arising from brain hyperæmia or from brain anæmia he had never seen as attendant upon labor. In every case of true puerperal convulsion he had found great quantities of albumen, and in all cases examined microscopically casts were present.

The theory of the albumen in the urine found at the time of convulsions, and not recognized previously, being the result of the

brain disturbance, was hardly tenable, when we consider the great amount of albumen found in these very cases of sudden appearance, the urine in many instances solidifying under heat, so that a test-tube or spoon in which it is heated may be overturned without disturbing it, and in malignant and fatal cases profuse hæmaturia being present. We have all of us seen albumen in the urine detected after convulsion from brain tumor, epilepsy, or other central conditions, but it is in quantities so small as to require delicate tests to discover it; Heller's test, for instance, giving a faint zone only at the margin of the acid.

The theory of anæmic origin, so strongly urged some years ago in a review in *Hays's Journal*, by the late Prof. Carson, is from an experimental point of view equally untenable. If the condition of anæmia bore any relation to convulsions as cause to effect, then, at any rate, we ought to have convulsions occurring after flooding; for if a slowly-developing anæmia, to which the brain would gradually accustom itself, would be a cause of eclampsia, how much more would the sudden abstraction of blood be attended with violent convulsions! But so far does experience not sustain this position that no relation between the two is ever seen in obstetric practice.

Dr. Smith had seen a vast number of cases of hemorrhage, both from placenta prævia, occurring weeks before labor, and from flooding after labor, and had seen the subjects of these conditions as nearly moribund from loss of blood as could be to live, pulseless, and with respiration almost suspended, and yet never had he seen puerperal eclampsia following such a case.

That the condition of pregnancy in itself predisposes to renal disease cannot be questioned; why or how, cannot be explained. But it is a matter of common experience that in cases of chronic albuminuria, when, under treatment, a diminution of the renal symptoms has taken place, the occurrence of pregnancy kindles up the spark into an active flame, and the chemical and microscopical tests and the physical and rational signs all show a marked and steady increase of the kidney trouble. Dr. Smith has had a patient for over nine years with chronic Bright's disease, in whose case treatment temporarily subdues the condition; but so rapidly does pregnancy aggravate it that on two occasions the examination of the urine, showing a great increase of albumen, has enabled him to diagnosticate pregnancy before the suppression of the menses had led the patient herself to suspect it. But in addition to this tendency to albuminuria from the mere condition of the pregnant woman, we have a powerfully-exciting cause in the pressure of the gravid uterus upon the renal vessels, more apt, as Dr. Tyson has shown, to occur in primiparæ; also, as is seen, in women having a long rest between their pregnancies, in women with multiple pregnancies, and with pressure from the distention of a uterus with amniotic dropsy. And it is in these cases in which the development of the renal symptoms is rapid that we have the greatest tendency to convulsions and the most violent and fatal form of them when they arise.

Dr. Smith agreed with Scanzoni, that the more decided the evidences of renal disease, the more violent the convulsions and the more apt to be fatal. Recovery after the appearance of marked hæmaturia, with urine solidifying under heat, is the exception, and yet in cases in which the urine becomes albuminous early in pregnancy, and continues slowly to increase in this condition, we rarely have convulsions, unless set up by a sudden aggravation of the kidney lesion by some rapidly-developing cause. In this respect there is a resemblance to the history of the albuminuria of scarlatina, in which we observe that in those cases in which the renal trouble shows itself early, and proceeds by a steady course, we very rarely have convulsions; whereas in cases suddenly becoming œdematous, and showing the presence of large quantities of albumen, from exposure to cold, we very frequently have those symptoms culminating in eclampsia. And we have in the scarlatinal uræmia, in its complete history, a very strong argument by analogy in favor of the uræmic origin of puerperal convulsions, based upon the precise identity in the character of the convulsive movements, in the mode of onset, and the conditions of brain following each spasm, as well as those resulting from a continued repetition of them. The fact already mentioned, of convulsions having their violence and fatality proportioned so fully to the rapidity of development of the renal disease, observed as common to both affections, is further sustained as an argument by another equally well known fact, that often the first condition of things to call attention to the kidneys is the simultaneous appearance of anasarca and convulsions in patients previously considered in good health, the one in a normal physiological state of pregnancy, the other as fully convalescent from a mild attack of fever. And as a further point in the analogy, we often make in both conditions, even when anasarca and the general evidence of renal troubles are present, fruitless examinations of the urine for the discovery of either albumen or casts; finding at one time such conditions, while at others they are entirely absent and yet without any change in the general symptoms. But no one would consider this as militating against the theory of scarlatinal eclampsia being renal in its origin: why, then, should the fact that some observers have at times failed to find albumen in the urine of patients, *before* labor, who had eclampsia, followed by the *detection* of albumen during labor, be looked upon as a con-

clusive argument against the renal origin of puerperal convulsions?

Dr. FRED. P. HENRY said that Dr. Tyson's paper had confirmed his belief that Bright's disease is more than usually malignant when associated with the puerperal state. Under the term malignant he referred particularly to the explosive symptoms, coma and convulsions. This fact acquires a special interest when it is pointed out that there are conditions under which Bright's disease is rendered peculiarly *benign*. On a recent occasion he had endeavored to show that Bright's disease is very favorably modified as to its explosive symptoms by its association with phthisis. At that time he had seen several cases whose study had induced him to advocate this view, and since then he has seen several more. Patients with great œdema, albumen, and casts in the urine and cavities in the lungs, have retained their consciousness until almost the last moment of life, and have had no convulsions. Any one of large clinical experience must have observed this fact. Dr. Henry had endeavored to account for it by the insufficient oxidation of the blood due to the lung disease. It is well known that Frerichs advocated the view that it is not the urea that causes the explosive symptoms, but carbonate of ammonium, a substance containing an additional atom of oxygen. Whether this be so or not, Dr. Henry is of opinion that diseases attended with insufficient oxidation of the blood, such as phthisis, modify Bright's disease in a favorable manner as regards the explosive symptoms. On the other hand, during gestation these processes of oxygenation are very active. Oxygen is required both for the mother and fœtus, and during the active interchange of gases the accumulated urea is readily converted into a more poisonous substance, whether this be carbonate of ammonium or some other.

It is customary to speak of the puerperal period as one of hydræmia, and this view was ably advocated by the late Prof. Carson; but such opinions have generally been founded upon theoretical considerations and the gross appearances of the blood. Even the microscope cannot determine absolutely the condition of the blood; a minute examination with Malassez's apparatus will, of course, give the relative richness in cells, but will not give any idea of the total amount of blood in the body, which certainly has a bearing upon the question.

In regard to the mechanical theory of pressure as a cause of Bright's disease during gestation, by impeding the flow of blood through the emulgent veins, it would require to be shown, in order to sustain it, that the forms of kidney disease associated with diseases of the heart, impeding the return flow of blood, are identical with the forms associated with pregnancy.

Dr. C. B. NANCREDE said he did not think Bright's disease, occurring in the puerperal state, could be due to pressure, since we have it coming on early in pregnancy; nor is one kidney more affected than the other. The form of the disease is not that which is caused by obstructions, which is brown induration. The uterus cannot press upon the emulgent vein, since we have a large amount of intestines between the two. In the cases of tumors of the uterus, we do not have this disease, according to most authorities; again, we have it in multiparæ. We meet with it much more frequently in twin pregnancies, even where the element of pressure is largely eliminated.

Dr. H. LENOX HODGE said that in distentions of the abdomen from ovarian tumors, albumen is sometimes found in the urine. It seems, in these cases, to be due simply to pressure. Although the pressure may be very great, and albumen present in the urine, yet convulsions do not occur. He had never known a case of convulsions due to the pressure of an ovarian tumor. Pressure does not seem enough to account for convulsions. In pregnancy there is an unusual nervous excitability, and the blood is filled with the effete products from two beings, in addition to pressure. Those who thought that in pregnancy there was no pressure on the renal veins appear to have overlooked the fact that the pressure is caused not by the direct contact of the uterus, but by the coils of intestines filled with gas and liquid, which like air-cushions transmit pressure in every direction, around every curve and in every notch.

Much light in many disorders is thrown upon their pathology by the results of the treatment adopted, and by the subsequent history of the case. In the treatment of puerperal convulsions, free venesection is recommended by the majority of authorities, although bleeding has fallen into disuse in most other disorders. The success of those who bleed freely in puerperal convulsions has been very marked. Dr. Tyson read, at the last meeting, the experience of Dr. Hiram Corson as being greatly in its favor. Dr. Hodge said that his father could not recall a single case of puerperal convulsions which he had lost when he had charge of it from the beginning. He bled, and bled freely. On the other hand, a very different treatment is followed in Bright's disease, and certainly very few would dare to bleed.

Then, again, as regards the subsequent history of the case. In Bright's disease there is a history of progressive danger. It generally ends in death. In the most favorable cases, if recovery takes place, there is a tedious convalescence. In puerperal convulsions the danger is limited to pregnancy, to labor, and to a little while after labor. If this period be passed, no matter how severe the convulsions have been, there is rapid improvement

and rapid restoration to health. Such different results must be due to some difference in pathological condition.

Dr. TYSON said he had already referred in his concluding remarks to the two views now held; one ascribing the result to a congestion due to pressure by the gravid uterus on the renal veins, the other to a poison accumulating in the blood, similar to that of scarlatina, and acting similarly; that against the former it is urged that abdominal tumors of equal size with the gravid uterus do not cause albuminuria; that Bright's disease sometimes occurs in the earliest months of pregnancy, when it is impossible that pressure should be exerted by the gravid uterus on the renal veins. That against the latter it is urged that, except in cases where the Bright's disease pre-existed, it very seldom originates in multiparæ, but only in primiparæ, and in multiparæ with plural births where pressure is most likely to be exerted. But since, as stated by Dr. Hodge, cases do thus occasionally occur early in pregnancy, and albuminuria is sometimes found caused by the pressure of large abdominal tumors, we must, in truth, admit the occasional operation of both causes; although he believed the second was the more frequent, especially as the form of kidney disease almost invariably found is the catarrhal, or tubal nephritis; whereas the form found in congestion of the kidney due to obstruction is always interstitial nephritis, in which the connective tissue is the seat of proliferation.

As to the prognosis of the two conditions, scarlatinal nephritis and the nephritis of pregnancy, he had also pointed out a similarity. If the poisoning is not too profound, and no lesion results from the convulsion itself, or the kidney is not permanently damaged, recovery is likely to take place in both. And as to the therapeutics being radically different in the two cases, Dr. T. was by no means certain that bleeding would not be as good a remedy in the convulsions of acute Bright's disease as in puerperal eclampsia, and, although it is never practised, the treatment which is found to be of most service under these circumstances—*active purgation, sweating*, etc.—is of the same character as bleeding, and operates in the same general way. Bleeding might be of great advantage in the convulsions of Bright's disease, and his friend Dr. Hiram Corson had already been referred to (in the body of the paper) as having used it with advantage. The difference in the two conditions lies chiefly in this, that the kidney is generally less damaged in the puerperal condition, and, having the cause removed, the organ is enabled to return rapidly to its original state and perform its function of elimination; while in the scarlatinal nephritis, sometimes, although not always, the poison has operated to such a degree as to produce permanent organic change in the organ, which cannot be removed, and thus the acute condition becomes a chronic one.

GLEANINGS FROM EXCHANGES.

A CASE OF POISONING BY CARBOLIC ACID INJECTED INTO A HEMORRHOIDAL TUMOR (*The Cincinnati Lancet and Clinic*, August 3, 1878).—Dr. T. L. Wright reports the case of a man, æt. 50, who suffered from hemorrhoids, which were injected by a travelling quack with a compound containing carbolic acid. The result in the case of two of the tumors was favorable. In the course of four or five weeks after the first injections, a new operation was performed upon another one of the hemorrhoids. This one was situated near the anus, and in a few hours after the injection (by a hypodermic syringe) the tumor escaped without the body and would not remain within the anus when replaced.

This injection was made about eleven o'clock A.M. The patient felt unusually uncomfortable, and at once went to bed. About four o'clock P.M., had a chill, attended with great nervousness and distress. Dr. Wright did not see the patient till six o'clock next morning. He had had a miserable night,—was in great nervous distress generally, but particularly complained of insupportable giddiness, and strange feeling about the head. As the patient was suffering from carbolic-acid poisoning, treatment of an eliminative character was instituted, with the bromides in addition. In the afternoon he was again seized with a "nervous chill,"—although profusely warm; unsteady, weak, irregular pulse, great giddiness, and impending convulsions. The patient recovered from this "chill," but continued exceedingly dizzy for three days longer.

After the patient had somewhat recovered, the tumor was removed with the knife. The internal structure of the tumor was full of sinuses, like those seen in the base of sponges. The syringe had penetrated into one of these, and the entire injection was passed directly into the circulation, causing all the sudden and dangerous symptoms that subsequently were developed.

LYMPHADENITIS RETROPHARYNGEALIS AND ITS RELATION TO IDIOPATHIC RETROPHARYNGEAL ABSCESS IN CHILDREN (*The Boston Medical and Surgical Journal*, August 1, 1878).—Dr. E. Kormann (quoted by Dr. Hayden in a review of recent progress in children's diseases) comes to the following conclusions as the result of his investigations into these conditions.

1. Swollen and inflamed retropharyngeal glands (lymphadenitis retropharyngealis) are a frequent accompaniment of diseases of the nose, pharynx, and mouth, as well as of the ear, and are probably to be regarded as the rule, in the same way as a swelling of the subcutaneous glands in eczemas of the skin, and in scrofulous inflammation in general. Among exciting causes are prominently to be

mentioned chronic inflammations as found in scrofulous children, and the acute affections of which inflammations of the mouth are one symptom, as diphtheria, measles, scarlatina, soör, syphilis. With regard to smallpox the author has had no experience.

2. Retropharyngeal abscesses are always secondary,—idiopathic abscesses to a lymphadenitis, traumatic abscesses being consecutive to injuries, and sinking abscesses following caries of the vertebræ. Lymphadenitis is also a secondary affection, following a scrofulous or infectious disease of the mucous membrane. Abscesses called by Bokai secondary abscesses are to be classed with the sinking abscesses.

3. Retropharyngeal abscesses are not limited to the first two years of life (Schmitz), or to childhood (Bokai), although this affection in adults is extremely rare.

COMPARISON OF OPIUM, BELLADONNA, AND ACONITE (*The Lancet*, July 20, 1878).—M. Jules Simon establishes the following comparison between opium, belladonna, and aconite. 1. In regard to their action on the alimentary canal, opium causes thirst, dryness without acrimony, want of appetite, nausea, vomiting, constipation; belladonna, thirst, dryness with acrimony, nausea, vomiting, and diarrhœa; aconite, dryness, sensations of pricking and burning of the tongue, salivation in full doses, vomiting, and diarrhœa. 2. In regard to their action on the circulation, opium acts as a stimulant, causes diminution of pressure, though it is sometimes without action, and in large doses causes acceleration of the pulse and collapse. Belladonna acts as a sedative, lowers the strength, retards the frequency of the pulse, and produces a febrile state of the system. Aconite acts as a sedative, diminishes the arterial tension, renders the face pallid, retards the frequency of the pulse, and stops the heart in diastole. 3. In regard to the respiration, opium allays dyspnœa, when present, by diminishing the bronchial secretions; in large doses it causes collapse. Belladonna calms down excited respiration, diminishes secretion, and, in large doses, renders respiration spasmodic and irregular. Aconite retards respiration by its direct action on the nerves. 4. In regard to their action in febrile states, opium augments the cutaneous secretions, and produces general malaise, erythema, and eruptions. Belladonna produces neither sweating nor general discomfort, raises the temperature, and sometimes causes scarlatina-like eruptions. Aconite lowers the temperature. 5. In regard to their action on the secretions, opium diminishes the quantity of urine, and, in fact, diminishes the secretions generally. Belladonna causes augmentation of the renal secretion, with diminution of the bronchial secretion. Aconite causes increase of the urinary secretion, but diminishes the bronchial secretion. 6. In regard to their action on the nervous system, opium acts chiefly on the cerebro-spinal system, belladonna on the cerebro-spinal system, and aconite on the spinal cord. Opium causes somnolence, sleep, intoxication, vertigo, muscular debility, diminution of common sensibility, contraction of the pupil, and diminution of the activity and vigor of reflex actions. Belladonna causes sleeplessness, gay or furious delirium, hallucinations, muscular agitation, diminution of the sensibility of the face, dilated pupils, and remarkable diminution of the reflex acts. Aconite leaves the intellectual faculties intact, but causes muscular torpor, anæsthesia, hallucination of the senses, and diminution of reflex actions, and produces slight dilatation of the pupil.

A CASE OF SCIATICA TREATED BY NERVE-STRETCHING (*The Lancet*, July 6, 1878).—Dr. A. W. Macfarlane reports the following case. Mrs. X. is 29 years of age. When sixteen years old, she suffered from slight lateral curvature of the spine, which to a very slight extent still exists; and since that time she has occasionally suffered from spinal tenderness, which has always yielded to tonics and counter-irritation of various kinds. With this exception she has been a very healthy woman. She has never borne children, but has no uterine disturbance.

On January 26, 1877, Dr. Macfarlane found her laboring under a very painful attack of sciatica, which had come on after a chill; and from that time until November 3 it was uninfluenced by treatment, although most perseveringly applied,—locally, by morphia injected hypodermically, aconite, belladonna, opium, chloroform, and cantharidine liniments, leeches, fly-blisters frequently applied, acupuncture, hot douching, actual cautery, and galvanism; internally, by quinine, iron, chloride of ammonium, strychnine, arsenic, phosphorus, iodide of potassium, zinc, actæa racemosa, turpentine in large doses, purgatives, etc. These were all tried in full, even large, doses, and continued sufficiently long to show they were inert. The only improvement that took place was a transient one, when, at the seaside, she was having hot salt-water douches.

Dr. Macfarlane was at last driven to propose stretching the nerve, and performed the operation, under antiseptic precautions, on November 3, stretching the nerve thoroughly, though he failed to lift the leg off the table. The wound healed by the first intention. Since that time till now (July 3), more than eight months, not the slightest return of pain has been experienced.

DISLOCATION OF MUSCLES (*The British Medical Journal*, July 13, 1878).—Mr. George W. Callender, after detailing some interesting cases of this injury, concludes as follows: "If, then, you come across a case in which sudden or unusual movements of the body have been followed by pain,—local in its

character,—made worse by certain movements, or preventing certain movements, and especially if such pain be referred to the site of muscular digitations about the spine or to that of long comparatively slender muscles, as in the forearm, it is at least worth your while to try the simple measures which we may use for reducing the dislocation of a muscle. First, guided by the pain, decide as to the muscle or digitation of a muscle probably the seat of the trouble. Secondly, relax this muscle so far as you can. Thirdly, by firm manipulation, such as by rubbing with the hand or by kneading with the thumb, endeavor to replace it. Fourthly, if this fail, make pressure over the part whilst you bring the muscle into action or put it on the stretch; and, if the less painful measures have failed, this is almost sure to bring the muscle into position. All this has to be done without the employment of an anæsthetic. We need guidance from the patient; we require action in the muscle. Some amount of pain is inseparable from the treatment of these dislocations."

THE FORM AND CONTAGIOUSNESS OF YELLOW FEVER (*The Lancet*, July 20, 1878).—Mr. Robert Lawson, Inspector-General of Hospitals, after a detailed consideration of the relation of this disease to other fevers, and especially of a number of cases which occurred on board H. M. S. Bristol, sums up his conclusions as follows:

1. Yellow fever is not a disease always presenting the continued form, but is met with frequently as a remittent, and even as an open intermittent.

2. The sporadic cases presenting yellowness of surface and black vomit are also found to have the train of urinary symptoms characterizing yellow fever, and are consequently identical with those met with during an epidemic.

3. In very many instances where persons in the vicinity of yellow-fever cases are attacked with the disease, the facts do not admit of the exclusion of local causes, and such instances, therefore, cannot enable us to decide whether these causes or personal contagion have originated the disease; but from time to time other instances occur in which the exclusion of local causes can be assured, and in these, however extensive the exposure of susceptible individuals to the emanations from the sick may have been, the uniform result is that no communication of the disease has taken place.

TREATMENT OF INTERMITTENT FEVER BY CARBOLIC ACID (*The Canadian Journal of Medical Science*, June, 1878).—Stern gave carbolic acid in recent cases, as well as in old cases relapsing after quinine. He prescribed it according to the formula of Hehle: carbolic acid 0.40, distilled water 180.00 (or 1 in 72); one tablespoonful three times a day. Out of twenty cases so treated, fourteen were cured after a single dose of this solution, four after two doses; two cases resisted the treatment. Six were quotidian fevers, eleven tertian, and two quartan; in these last there was no return of the attack after the beginning of the carbolic acid treatment; in the tertians there was ordinarily one more attack, in the quotidian two more.

NOTES AND QUERIES.

EDITOR PHILADELPHIA MEDICAL TIMES:

DEAR SIR,—For some time past I have noticed that credit has been given to various gentlemen for the discovery that arsenic, in some form, taken at the same time with bromide of potassium, prevents the eruption usually seen when the latter remedy has been used any length of time.

This has long been known at the Infirmary for Nervous Diseases, and frequently used, but always with the full understanding that Dr. Echeverria, of New York, was the first to call the attention of the profession to it.

In his book on "Epilepsy," New York, 1870, page 318, after mentioning certain other effects produced by bromide of potassium, he says,—

"The skin has displayed a peculiar brown hue, more striking in the forehead and neck, and, more generally, a papular eruption, upon exhibition either of small or large doses of bromide, and irrespective of any condition of bromism. I discovered, four years ago, that the association of the bromide of potassium and the arseniate of potash avoids the eruption just mentioned. We, however, fall short of this result if alkaline baths are not employed in conjunction, or if the eruption be not previously arrested on discontinuance of the bromide. From five to eight minims of Fowler's solution, added to each dose of the mixture of bromide, will prevent the cutaneous eruption."

Very truly yours,
ROBERT H. ALISON.

250 SOUTH SEVENTEENTH ST., July 26, 1878.

NEW YORK, August 3, 1878.

THE next annual meeting of the American Dermatological Association will be held at the Grand Union Hotel, Saratoga Springs, New York, August 27, 28, and 29. Many important papers will be read. Regular practitioners are cordially invited to attend the meeting.

R. W. TAYLOR, M.D., *Secretary.*

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM JULY 28 TO AUGUST 10, 1878.

SUTHERLAND, CHAS., COLONEL AND SURGEON.—Granted leave of absence for nine months. S. O. 162, A. G. O., July 26, 1878.

MIDDLETON, J. V. D., MAJOR AND SURGEON.—Granted leave of absence for twenty days. S. O. 137, Department of the East, August 3, 1878.

TILTON, H. R., MAJOR AND SURGEON.—Granted leave of absence for four months. S. O. 166, A. G. O., August 1, 1878.

GARDNER, W. H., CAPTAIN AND ASSISTANT-SURGEON.—Relieved from duty at Atlanta, Ga., and assigned to duty as Post-Surgeon at St. Francis Barracks, St. Augustine, Fla. S. O. 15, Department of the South, July 28, 1878.

CRONKHITE, H. M., CAPTAIN AND ASSISTANT-SURGEON.—Assigned to duty as Post-Surgeon at Fort Brady, Mich. S. O. 136, Department of the East, August 2, 1878.

WILSON, WM. J., CAPTAIN AND ASSISTANT-SURGEON.—Assigned to duty as Post-Surgeon at Fort Niagara, N. Y. S. O. 131, Department of the East, July 27, 1878.

CLEARY, P. J. A., CAPTAIN AND ASSISTANT-SURGEON.—Granted leave of absence for one month. S. O. 134, Department of the Missouri, July 30, 1878.